

# MOBILITY AND TOURISM PRODUCTS WITHIN LOCAL EMISSIONS OF CO<sub>2</sub>

## AN EXPLORATORY APPROACH BY IMPACTUR- ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES

Fernando Perna, Maria João Custódio

[fperna@ualg.pt](mailto:fperna@ualg.pt) [mjcusto@ualg.pt](mailto:mjcusto@ualg.pt)

CiTUR - ESGHT / University of Algarve

University of Lodz - November, 17 2022

Cofinanciado por:



1

## Goal

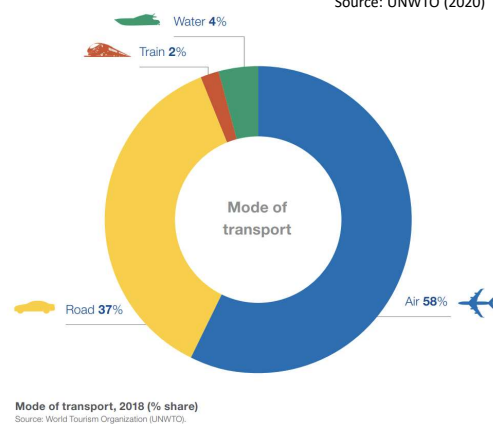
**Consideration 1:** Tourist transports are responsible for consuming one third of all final energy in the European Union.

**Consideration 2:** The local/global approach to sustainability requires an observation of CO<sub>2</sub> emissions not only in accessibility to the destination, but also associated with **visitor mobility at the destination**, and with the consumption of specific destination tourism products.

## Means and Purpose of Travel

Travelling for leisure and by air dominates international tourism

Source: UNWTO (2020)



2

## Algarve Region [Al Gharb] The West



## Europe



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO<sub>2</sub>: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)  
 MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO<sub>2</sub>: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

3

## Goal

**GOAL:** Applied to Algarve region, southern Portugal, the study aims to perform a first quantification and analysis on the emission of CO<sub>2</sub> in and of-peak peak season by:

- (a) The rent-a-car sector, essential for the mobility of visitors and,
- (b) The maritime-tourism sector, which as a tourism animation activity in the marine environment through tours in vessels on the shoreline and in sheltered waters are a product in increasing development in the region.



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO<sub>2</sub>: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

4

## Method

The knowledge engagement of the role and responsibilities of tourism in climate change, demands a multiplicity of variables to be interiorized by the **combined adoption of quantitative and qualitative methods (mixed)**.

In this study, quantitative methods are used on the secondary (**published**) and primary data analysis (**questionnaires**), both on rent-a-car and on maritime tourism companies, analyzed mostly by measures of descriptive statistics.

The simulation of CO2 emissions (for rent-a-car) uses published and available **simulators**.

The qualitative methods mainly rely on **content analysis techniques**, to be applied within focus groups and interviews to managers of both activities, in order to ensure a more comprehensive and open view of quantified reality.



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO2: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

5

## Findings

In high season Algarve has to circulate approximately 20,000 **rent-a-car vehicles**.

A replacement of only 3,000 for electric vehicles (approximately 6.7% of the fleet) will result in a potential non-production of carbon dioxide that can reach 4,590 tons/year.

AND, this would be in addition to the benefits in terms of noise mitigation and demonstration effect.



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO2: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

6

## Findings

The almost five hundred (468) of **maritime tourism companies** operating in the region, essential for the mitigation of seasonality and diversification of tourism products, operate in a territory that in its large majority are under environmental protection status, e.g. Natura 2000 Network.

The decarbonization (not yet quantified) will be a strong impulse to increase the number of companies with recognition as Nature Tourism activity, which currently only covers 14.5% (68) of them.



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO<sub>2</sub>: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

7

## Limitations

The analysis is focused on Algarve **peak-season data**, so eventual generalizations to other destinations and seasons should be taken care of.

This is an observation on the supply side maritime tourism operators (companies), and demand side of rent-a-car (families), so by now it is not achieved an **integrated view of the market** that includes the consumers' perspective and companies simultaneous perspective.

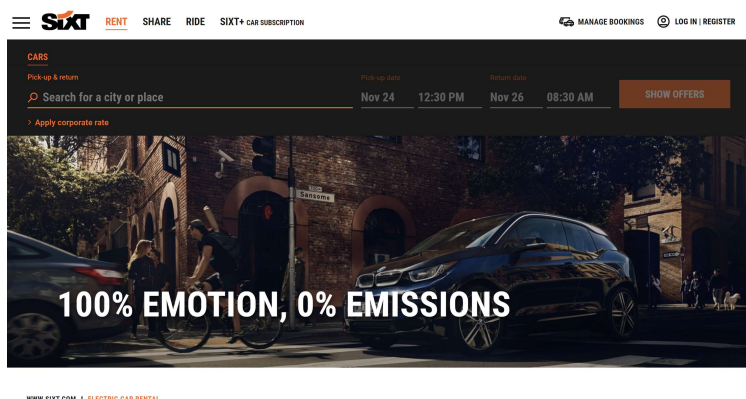
The **lack of knowledge of the miles covered on average and the diversity of vessels used in maritime-tourism** activities in the Algarve are, for now, a limitation of resolution still in progress on the quantification of its CO<sub>2</sub> emissions.

MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO<sub>2</sub>: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

8

## Practical Implications

The **rent-a-car** role in intraregional mobility is a reality that, more than an obstacle to decarbonization, should be seen as an agent of promotion and dissemination of decarbonization, including a **demonstration effect** that these vehicles in the region may have on the adoption of behavior so well by the resident population.



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO2: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

9

## Practical Implications

In the case of **maritime-tourism activities**, decarbonization prepares now companies for future legal burdens, e.g. the mandatory use of electric propulsion engines in vessels to access the **recognition of their activity as Nature Tourism**, and promotes the desired economic growth with less incorporation of resources.



MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO2: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

10

## Originality

Despite the variety of actions that have been undertaken by tourism stakeholders worldwide, **there is still limited public information on CO2 emissions by tourism businesses and destinations.**

Bobes, L. and Becken, S. (2016), Proving the Case: Carbon Reporting in Travel and Tourism, available at: <https://amadeus.com/en/insights/research-report/proving-the-case-carbon-reporting-intravel-and-tourism>. Last accessed on December 6th 2021.

The integration of **climate strategies in tourism policies is low.** “The other side of the coin”

World Tourism Organization and United Nations Environment Programme (2019), Baseline Report on the Integration of Sustainable Consumption and Production Patterns into Tourism Policies. Madrid: UNWTO, DOI: <https://doi.org/10.18111/9789284420605>. 74 8.

In the literature there is no consolidated evidence of the **simultaneous relationship of rent-a-car and maritime-tourism activities in the sustainability of a destination with the characteristics of the Algarve**, in particular the role of both in the climate change local/global framework.

---

MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO2: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

11

## References

[1] Agência Europeia do Ambiente (2020). Transportes, available at: <https://www.eea.europa.eu/pt/themes/transport/intro/>. Last accessed on September 1st 2022.

[2] UNWTO (2022). Tourism & Sustainable Development Goals, available at <https://tourism4sdgs.org/tourism-for-sdgs/tourism-and-sdgs/>. Last Accessed on September 9th 2022.

[3] Lilly, C. (2022). Next Green Car, available at <https://www.nextgreencar.com/emissions/makemodel/>. Last Accessed on July 15th 2022.

[4] ARAC (2022). Apoio à Descarbonização das Frotas de Rent-a-Car na Região do Algarve - Contribuição para um Turismo Sustentável. Lisboa: ARAC - Associação dos Industriais de Aluguer de Automóveis sem Condutor.

[5] Turismo de Portugal (2021). Registo Nacional de Turismo, available at <https://registos.turismodeportugal.pt/HomePage.aspx>. Last accessed on December 6th 2021.

[6] Bobes, L. and Becken, S. (2016), Proving the Case: Carbon Reporting in Travel and Tourism, available at: <https://amadeus.com/en/insights/research-report/proving-the-case-carbon-reporting-intravel-and-tourism>. Last accessed on December 6th 2021.

[7] World Tourism Organization and United Nations Environment Programme (2019), Baseline Report on the Integration of Sustainable Consumption and Production Patterns into Tourism Policies. Madrid: UNWTO, DOI: <https://doi.org/10.18111/9789284420605>.

## Thank you

---

MOBILITY AND TOURISM PRODUCTS IN LOCAL EMISSIONS OF CO2: AN EXPLORATORY APPROACH BY IMPACTUR-ALGARVE PROJECT TO RENT-A-CAR AND MARITIME-TOURISM ACTIVITIES / Fernando Perna & Maria J. Custódio (2022)

12